

## KP90HD Waterproof Keypad Manuel

### 1. Packing list

Name	Quantity	Remark
Digital Keypad	1	
User Manual	1	
Screw Driver	1	
Rubber Bungs	4	6*27mm, used for fixing
Self Tapping Screws	4	4*28mm, used for fixing
Diode	1	IN4004
Manager Card	2	Manager Add Card & Manager Delete Card

Please ensure that all the above contents are correct. If any are missing please notify the supplier of the KP90 .

### 2. Description

The KP90 is a single door multifunction access control with HID card reader. It is suitable for mounting either indoor or outdoor in harsh environments. It is housed in a strong, sturdy and vandal proof zinc alloy electroplated case. The electronics are fully potted so the KP90 is waterproof and conforms to IP68.

The KP90 supports up to 2,000 users in either a Card, 4~8 digits PIN, or a Card + PIN option and additional 10 groups Duress PIN/Card. The built-in card reader supports HID 125KHz frequency cards/tags. The KP90 has many extra features including Duress PIN/card, block enrollment, Wiegand 26~37 bits interface, and backlight keypad...etc.

These features make KP90 an ideal choice for door access not only for small shops and domestic households but also for commercial and industrial applications such as factories, warehouses, laboratories, banks and prisons.

### 3. Features

- Waterproof, conforms to IP 68
- Strong zinc alloy electroplated anti-vandal case
- Full programming from the keypad
- 2,000 users, supports Card, PIN, Card + PIN
- 10 groups Duress PIN/Card
- Card interface: HID 125KHz Card
- Can be used as a standalone keypad, PIN length 4~8 digits
- Pulse mode, Toggle mode
- Wiegand 26~37 input & output
- One programmable relay output, NO, NC, COM
- Adjustable door output time, alarm time, door open time
- Card block enrollment

## KP90HD Waterproof Keypad Manual

- With Manager Cards for adding or deleting card user easily
- Backlight keypad
- Built in light dependent resistor (LDR) for anti tamper
- Built in buzzer
- Red, Yellow and Green LED display the working status
- 12~24V DC or 12~18V AC

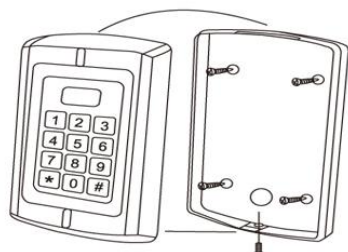
### 4. Specifications

Operating Voltage	12~24V DC or 12~18V AC
User Capacity	2,000 (Additional 10 groups Duress PIN/Card)
Keypad	12 keys: 3 X 4 digits
Card Type	HID 125KHz card
Card Reading Distance	3~6 cm
Active Current	≥65mA
Idle Current	≥35mA
Lock Output Load	Max 2A
Alarm Output Load	Max 20A
Operating Temperature	-20~50°C
Operating Humidity	10%~90% RH
Environment	Conforms to IP68
Adjustable Door Relay Time	1~99 seconds
Adjustable Alarm Time	0~3 minutes
Wiegand Interface	Wiegand 26~37 input & output
Wiring Connections	Electric Lock, Exit Button, DOTL, External Alarm
Dimensions	L128 X W82 X H28mm
Net Weight	600 g
Gross Weight	700 g

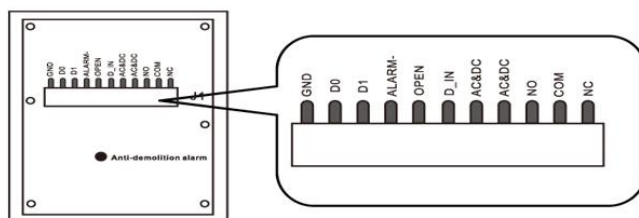
### 5. Installation

- Remove the back cover from the keypad using the supplied security screwdriver
- Drill 4 holes on the wall for the screws and 1 hole for the cable
- Fix the back cover firmly on the wall with 4 flat head screws
- Thread the cable through the cable hole
- Attach the keypad to the back cover

## KP90HD Waterproof Keypad Manual



KP90

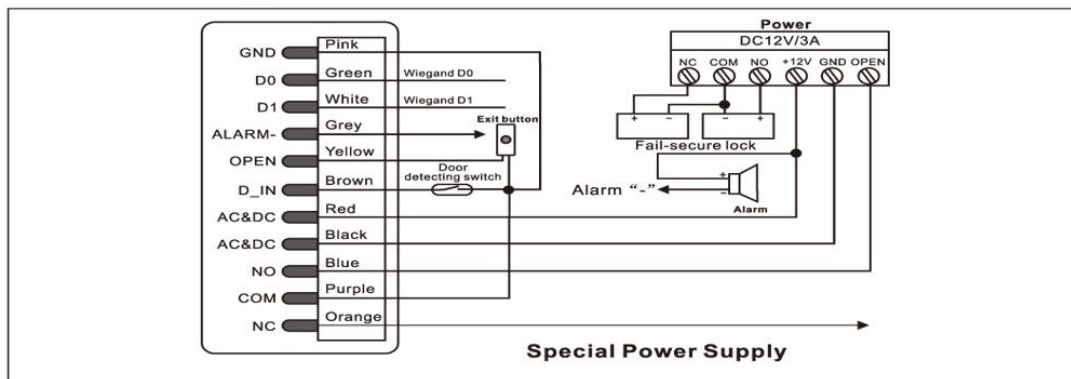


PCB connect diagram

### 6. Wiring

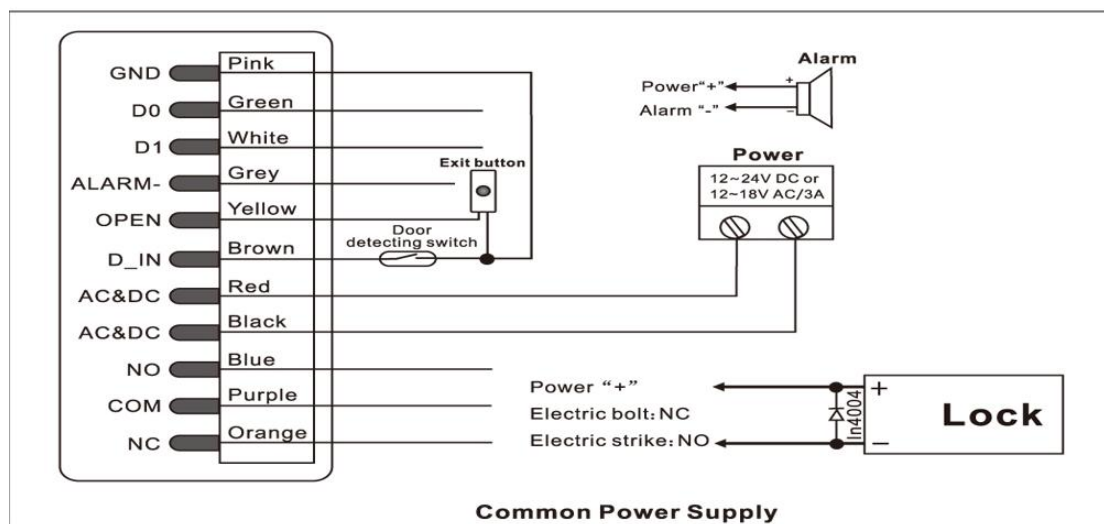
Colour	Function	Description
Green	D0	Wiegand Output D0
White	D1	Wiegand Output D1
Grey	Alarm -	Alarm Negative
Yellow	OPEN	Request to Exit Button
Brown	D-IN	Door Contact
Red	12~24V DC or 12~18V AC	12~24V DC or 12~18V AC Regulated Power Input
Black	12~24V DC or 12~18V AC	12~24V DC or 12~18V AC Regulated Power Input
Blue	NO	Relay NO
Purple	COM	Relay COM
Orange	NC	Relay NC
Pink	GND	KP90 Negative

### Connection Diagram





## KP90HD Waterproof Keypad Manual



**Notes:**

Connect the negative pole of the lock to NC is for Fail safe lock.  
 Connect the negative pole of the lock to NO is for Fail-secure lock.

### 7. Anti Tamper Alarm

The KP90 uses a LDR (light dependent resistor) as an anti tamper alarm. If the keypad is removed from the cover then the tamper alarm will operate.

### 8. Relay operation (Pulse mode and Toggle mode)

The relay on board can operate in Pulse Mode (suitable for access control) or Toggle Mode (suitable for arming/disarming alarms, switching lights, machines....etc)

Every time a valid tag/card or PIN is read/input in Pulse Mode, the relay will operate, for the pre-set relay pulse time.

Every time a valid tag/card or PIN is read/input in Toggle Mode, the relay changes state, which will not turn back until read card or input PIN again.

### 9. To Reset to Factory Default

To reset to factory default, power off, press **[\*]**, hold it and power on, release it until hear two beeps and the LED shines in orange, then read any two HID cards, the LED will turn in red, means reset to factory default setting successfully. Of the two HID cards read, the first one is Manager Add Card, the second one is Manager Delete Card.

Remarks: Reset to factory default, the user's information is still retained.

## KP90HD Waterproof Keypad Manual

### 10. Sound and Light Indication

Operation Status	Red Light	Green Light	Yellow Light	Buzzer
Power on	Bright	-	-	Short Ring
Stand by	Bright	-	-	-
Press keypad	-	-	-	Short Ring
Operation successful	-	Bright	-	Short Ring
Operation failed	-	-	-	3 Short Ring
Enter into programming mode	Bright	-	Bright	Short Ring
In the programming mode	-	-	-	-
Exit from the programming mode	Bright	-	-	Short Ring
Open the door	-	Bright	-	Short Ring
Alarm	Bright	-	-	Alarm

### 11. KP90 Detailed Programming Guide

#### 11.1 User Settings

To enter the programming mode	* [Master code] # 888888 is the default factory master code
To exit from the programming mode	*
<b>Note that to undertake the following programming the master user must be logged in</b>	
To change the master code	0 [New code] # [New code] # The master code is any 6 digits
<b>Setting the working mode:</b> set valid card only users set valid card <b>and</b> PIN users set valid card <b>or</b> PIN users	[3] 0 # Entry by Card only [3] 1 # Entry by Card <b>and</b> PIN together [3] 2 # Entry by either Card <b>or</b> PIN (default)
<b>To set a user in either card or PIN mode ( [3] 2 # ) (Default setting)</b>	
To add a <b>PIN</b> user	[1] [User ID number] # [PIN] # The ID number is any number between 1~2000. The PIN is any 4~8 digits between 0000~99999999 with the exception of 1234 which is reserved. Users can be added continuously without exiting from programming mode as follows: [1] [User ID No 1] # [PIN] # [User ID No 2] # [PIN] #
To delete a <b>PIN</b> user	[2] [User ID number] # Users can be deleted continuously without exiting programming mode

## KP90HD Waterproof Keypad Manual

<p>To change the <b>PIN</b> of a PIN user (This step must be done out of programming mode)</p>	<p>* [ID number#] [Old PIN#] [New PIN#] [New PIN#]</p>
<p>To add a <b>card</b> user (Method 1) This is a fastest way to add cards using ID number auto generation</p>	<p>1 [Read Card] [#] Cards can be added continuously without exiting programming mode</p>
<p>To add a <b>card</b> user (Method 2) This is the optional way to add cards using User ID Allocation. In this method a User ID is allocated to a card. Only one user ID can be allocated to a single card</p>	<p>1 [ID number] [#] [Card] [#]</p>
<p>To add a <b>card</b> user (Method 3) Add a <b>series cards</b> users - <b>Block Enrollment</b></p>	<p>5 [ID number] [#] [The 1st Card number] [#] [Card quantity] [#] Note that cards must be consecutive, and card quantity is between 1~2000 Maximum 2,000 cards can be enrolled at a stretch within 2 minutes</p>
<p>To delete <b>card</b> user by card Note users can be deleted continuously without exiting from programming mode</p>	<p>2 [Read Card] [#]</p>
<p>To delete a <b>card</b> user by user ID This option can be used when a user has lost their card</p>	<p>2 [User ID] [#]</p>
<p>To delete a card user by card number Users can be deleted continuously without exiting from programming mode</p>	<p>2 [Card number] [#]</p>
<p><b>To set a card and PIN user in card and PIN mode ( 3 1 # )</b></p>	
<p>To Add a <b>card</b> and <b>PIN</b> user (The PIN is any 4~8 digits between 0000 ~ 99999999 with the exception of 1234 which is reserved)</p>	<p>Add the card as for a card user Press * to <b>exit from the programming mode</b> Then allocate the card a PIN as follows: * [Read Card] [1234 #] [PIN #] [PIN #]</p>



## KP90HD Waterproof Keypad Manual

### KP90HD Quick Reference Programming Guide

To enter the programming mode	* [Master code] # 888888 is the default factory master code
To exit from the programming mode	*
<i>Note that to undertake the following programming the master user must be logged in</i>	
To change the master code	0 [New code] # [New code] # The master code can be 6 digits long
To add a <b>PIN</b> user	1 [User ID number] # [PIN] # The ID number is any number between 1~2,000. The PIN is any 4~8 digits between 0000 ~ 99999999 with the exception of 1234 which is reserved. Users can be added continuously without exiting programming mode
To add a <b>Card</b> user	1 [Read Card] # Cards can be added continuously without exiting from programming mode
To delete a <b>PIN</b> or a <b>Card</b> user	2 [User ID number] # for a PIN user or 2 [Read Card] # for a card user
<b>To unlock the door</b>	
To unlock the door for a PIN user	Enter the [PIN] then press [#]
To unlock the door for a card user	Present the card

## KP90HD Waterproof Keypad Manual

To change a <b>PIN</b> in card and PIN mode (Method 1) Note that this is done outside programming mode so the user can undertake this themselves	* [Read Card] [Old PIN #] [New PIN #] [New PIN #]
To change a <b>PIN</b> in card and PIN mode (Method 2) Note that this is done outside programming mode so the user can undertake this themselves	* [ID number #] [Old PIN #] [New PIN #] [New PIN #]
To delete a <b>Card and PIN</b> user just delete the card	[2] [User ID] [#]
<b>To set a card user in card mode ( [3] [0] [#] )</b>	
To Add and Delete a <b>card</b> user	The operating is the same as adding and deleting a card user in [3] [2] [#]
<b>To delete All users</b>	
To delete <b>ALL users</b> Note that this is a <b>dangerous</b> option so use with care	[2] [0000] [#]

<b>To set card users by Manager card</b>	
To add Card User by Manager Add Card	[Manager add card] [Read User card] [Manager add card] Cards can be added continuously
To delete Card User by Manager Delete Card	[Manager delete card] [Read User Card] [Manager delete card] Cards can be deleted continuously

<b>To unlock the door</b>	
For a <b>PIN</b> user	Enter the [PIN] then press [#]
For a <b>card</b> user	[Read card]
For a <b>card and PIN</b> user	[Read card] then enter [PIN #]



## KP90HD Waterproof Keypad Manual

### 11.2 Relay Setting (Pulse mode, Toggle mode)

<b>Pulse mode</b> (Factory default)	
<b>Pulse mode</b> (Door relay time setting)	<b>4</b> <b>1~99</b> <b>#</b> The door relay time is between 1~99 seconds, the factory default setting is 5 seconds.
<b>Toggle mode</b>	
Toggle mode	<b>4</b> <b>0</b> <b>#</b>

### 11.3 Door Detection, Alarm, Sound and Light Settings

<b>Door Open Detection</b>	
Door Open Too Long (DOTL) warning. When used with an optional magnetic contact or built-in magnetic contact of the lock, if the door is opened normally, but not closed after 1 minute, the inside buzzer will beep automatically to remind people to close the door and continue for 1 minute before switching off automatically.	
Door Forced Open warning. When used with an optional magnetic contact or built-in magnetic contact of the lock, if the door is open by force, or if the door is opened after 20 seconds of the electro-mechanical lock not closed properly, the inside buzzer and alarm output will both operate. The Alarm Output time is adjustable between 0~3 minutes with the default being 1 minute.	
To disable door open detection	<b>6</b> <b>0</b> <b>#</b> (Factory default)
To enable door open detection	<b>6</b> <b>1</b> <b>#</b>
<b>Alarm output time</b>	
To set the alarm output time (0~3 minutes). Factory default is 1 minute	<b>9</b> <b>0~3</b> <b>#</b>
<b>Keypad Lockout &amp; Alarm Output options.</b> If there are 10 invalid cards or 10 incorrect PIN numbers in a 10 minute period either the keypad will lockout for 10 minutes or the alarm will operate for 10 minutes, depending on the option selected below.	
Normal status: No keypad lockout or alarm	<b>7</b> <b>0</b> <b>#</b> (Factory default)
Keypad Lockout	<b>7</b> <b>1</b> <b>#</b>
Alarm Output	<b>7</b> <b>2</b> <b>#</b>
<b>Light and Sound Setting</b>	
To set keypad backlight	<b>7</b> <b>4</b> <b>#</b> To disable keypad backlight <b>7</b> <b>5</b> <b>#</b> To enable keypad backlight(Factory default)

## KP90HD Waterproof Keypad Manual

To set LED	<table border="0"> <tr> <td>[7][6]#</td> <td>To disable the red LED</td> </tr> <tr> <td>[7][7]#</td> <td>To enable the red LED(Factory default)</td> </tr> </table>	[7][6]#	To disable the red LED	[7][7]#	To enable the red LED(Factory default)
[7][6]#	To disable the red LED				
[7][7]#	To enable the red LED(Factory default)				
To set keypad tone	<table border="0"> <tr> <td>[7][8]#</td> <td>To disable the keypad tone</td> </tr> <tr> <td>[7][9]#</td> <td>To enable the keypad tone(Factory default)</td> </tr> </table>	[7][8]#	To disable the keypad tone	[7][9]#	To enable the keypad tone(Factory default)
[7][8]#	To disable the keypad tone				
[7][9]#	To enable the keypad tone(Factory default)				
<b>To remove the alarm</b>					
To reset the Door Forced Open warning	[Read Valid Card] or [Master Code #]				
To reset the Door Open Too Long warning	Close the door or [Read Valid Card] or [Master Code #]				

### 12. Duress User Settings

There are 10 groups Duress PIN/card available. When input Duress PIN/card, the door will open, at the same time, the output alarm operates.	
<b>To set Duress PIN user</b>	
To add a PIN user	[8] [User ID number] # [PIN] # (The ID number is any number between 2001~2010)
To delete a PIN user	[2] [User ID number] #
<b>To set Duress card user</b>	
To add a card user	[8] [User ID number] # [card] # (The ID number is any number between 2001~2010)
To delete a card user	[2] [User ID number] #
<p>Note:</p> <p>① User ID number must be any 4digits between 2001~2010</p> <p>② Duress PIN/card must be unique, should be distinguished from common PIN and card (When the Duress PIN/card is the same with common PIN and card, they will become invalid in Duress, and worked as common user function)</p>	

### 13. Wiegand Mode Setting

KP90 supports Wiegand 26~37, both input and output. It can be used as a reader or controller.	
To set Wiegand format:	[9] [26~37] # (Default setting: Wiegand 26)

### 14. Interconnecting Two Devices

#### 14.1 KP90 operating as a Wiegand Output Reader

In this mode the KP90 supports a Wiegand 26~37 bit output so the Wiegand data lines can be connected to any controller which supports a Wiegand 26~37 bit input. See figure 1.

## KP90HD Waterproof Keypad Manual

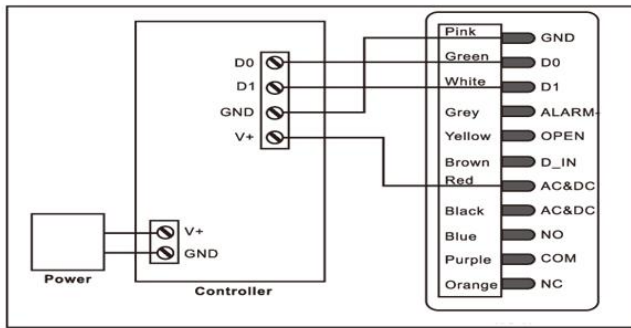


Figure 1

### Transmission Format:

#### ● 1: Keypad Transmission

The Reader will transmit the PIN data when it receives the last key (#) press after PIN code.

**Format:** PIN Code ( any 4~8 digits between 0000~99999999)

**Example:** PIN code:111111

Press 111111 #, then the output format will be: 0000111111

(Note: if press an invalid PIN (any 4~8 digits), the data will be also transmitted.)

#### ● 2: Proximity Card Transmission

The Reader will transmit the card data when it reads the Card.

**Format:** Card Number

(Note: No matter the card is valid or invalid, the data will be transmitted)

### 14.2 KP90 operating as a Controller

In this mode the KP90 supports a Wiegand 26~37 bit input so an external Wiegand device with a 26~37 bit output can be connected to the Wiegand input terminals on the KP90 . Either an ID card reader (125KHz) or an IC card reader (13.56MHz) can be connected to the KP90 . Cards are required to be added at the external reader, except where an external HID reader is used, in this case cards can be added at either reader or controller. See figure 2.

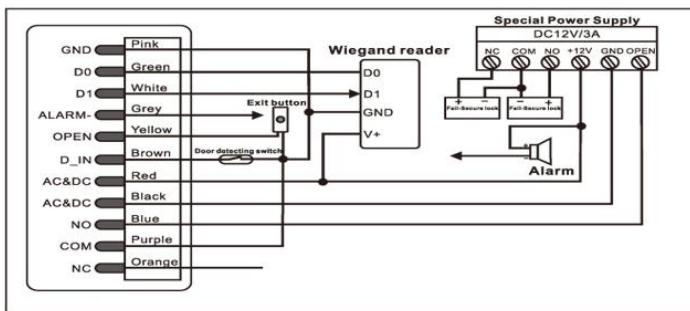


Figure 2